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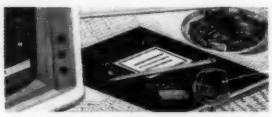

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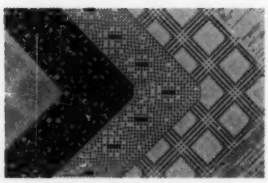

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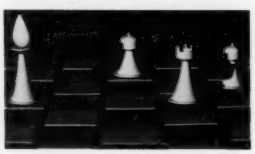

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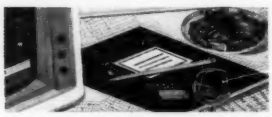

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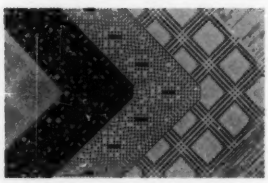

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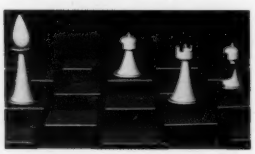

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The university-industry relationship
by Louis Robinson
IBM Corporation
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March 1983

A crucial challenge for both academia and industry is to apply the constantly changing technology of information processing in improving the human condition

BITNET— because it's time
by Ira H. Fuchs
City University of New York
Vol. 3, No. 1, pages 16-27
March 1983

A new computer network provides for easy, inexpensive communication among a growing number of colleges and universities

DUCK: a summer camp in computing literacy
by Kevin W. Bowyer and Mel Ray
Duke University
Vol. 3, No. 3, pages 20-27
October 1983

Personal computers help precollege students achieve computing literacy in a multifaceted program operated by Duke University

GOTO poetry
by Alfred Kern
Allegheny College
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An experimental course in computer-generated poetry provides revealing insights into human creativity

Personal computers in a writing course
by Paula R. Feldman
University of South Carolina
Vol. 4, No. 1, pages 4-9
Spring 1984

In an experimental business writing course at the University of South Carolina, students found that word processing made the task of writing and revising easier and more interesting—and even fun

A program for teaching the teachers
by Hugh F. Cline and Jana Anderson
Educational Testing Service
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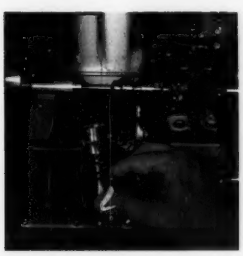
In a program tailored for secondary schools, the Educational Testing Service, supported by IBM, has trained teachers to demonstrate how personal computers can aid in preparing students for the technological world of today

Engineering



Uncontrolled motion and the human body
by Kenneth D. Willmert
Clarkson College of Technology
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Computer programs simulate motions of the human body such as those resulting from an airplane or automobile crash

Toward the factory of the future
by Yehonathan Hazony
Princeton University
Vol. 3, No. 4, pages 4-11
December 1983

At Princeton University, a prototype laboratory is being developed for research and education in computer-integrated manufacturing

The intelligent use of structural analysis
by Donald E. Grierson
University of Waterloo
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December 1983

In structural design computation, sensitivity analysis can predict how response quantities will vary with given design changes

A tooth for a tooth—the designing of gears
by Michael Savage
University of Akron
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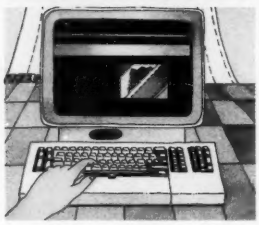
Interactive computer graphics aids in optimizing sets of gears for given design specifications



Of drops and bubbles—the technology of space processing
by R. Shankar Subramanian
Clarkson University
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Computer-based models aid researchers investigating the containerless processing of glass in the low-gravity environment of space

Assessing the reliability of complex systems—an interactive approach
by André Poucet and Paul De Meester
Leuven University
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A conversational, menu-driven program called CAFTS has been developed at Leuven University for automated fault tree analysis using interactive computer graphics

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Humanities

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Rhyming to reason
by Edmund Skellings
Florida International University
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Color graphics can free the poet from mundane mechanics and allow new possibilities of form in the writing of verse; it can also illustrate the intricate patterning and texturing of sound in the work of the great poets of the past

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A new environment for literary analysis
by John B. Smith
University of North Carolina
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Summer/Fall 1984

A text retrieval and analysis system called ARRAS provides rapid access to textual data bases; it also may herald new ways of investigating and understanding literature

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Medical Sciences

Molecular recognition in drug research
by Philip M. Dean
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Computation of the forces acting between molecules is vital for the medicinal chemist seeking to develop rational principles for drug design

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Thermoregulation diagnostics—the soft way to early detection of cancer?
by Maria Blohmke and Günther Heim
University of Heidelberg
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A pilot study at the University of Heidelberg may lead to development of a sensitive, noninvasive method of detecting cancer in apparently healthy persons by measuring changes in skin temperature

Physical Sciences

Stormy weather, invisible paint, and a silver lining
by Milton Kerker
Clarkson College of Technology
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March 1983

Wherein the computer, applied in studies of various light-scattering phenomena, serves as an agent of serendipitous discovery

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The Cambridge Database of molecular structures
by Frank H. Allen and Olga Kennard
University of Cambridge
Vol. 3, No. 3, pages 28-43
October 1983

At the Cambridge Crystallographic Data Centre, computer-based information on the molecular structure of 36 000 organo-carbon compounds aids researchers in many disciplines

The role of computing in high-energy physics
by Michael Metcalf
CERN
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December 1983

Expanding in step with increasingly sophisticated experimentation, applications of computers in high-energy physics range from aiding in the design of accelerators and controlling their operation to on-line signal analysis, data analysis, and network communication

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Kinship graphs—a new representation of dynastic relations
by Arthur L. Loeb
Harvard University
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With the flexibility of interactive computer graphics, any member of a given dynastic group can be placed centrally on the screen, and that person's family context can be displayed in a variety of kinship representations